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10/529,920	02/06/2006	Neil Freebairn	072995-0015	5285
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EXAMINER				
MACILWINEN, JOHN MOORE JAIN				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/529,920

**Applicant(s)**

FREEBAIRN ET AL.

**Examiner**

John M. MacIwinen

**Art Unit**

2442

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14, 17, 18, 28, 29, 33-35 and 37-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14, 17, 18, 28, 29, 33-35 and 37-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group I in the reply filed on 8/8/2008 is acknowledged. The traversal is on the ground(s) that the Examiner "has not provided any reason as to why there would be a serious burden of search" and that the Examiner "does not actually content that the invention is independent". This is not found persuasive because Applicant's arguments are discussing standard US restriction practice; however, the Application is the National Stage and thus, according to the cited 37 CFR 1.499, a single invention must be elected and the rules applied by the Examiner are according to 37 CFR 1.499 (see also 37 CFR 1.475 and MPEP 1893.03(d)).

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 -13, 17, 28 - 29, 33 - 35, 37 - 38, 40 - 42, and 48 - 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cloonan (5,537,403) in view of Siemens (UMTS: Opening Up a World of Opportunities) and Odfelt (US 7,315,900 B1).

4. Regarding claim 1, Cloonan shows a communications node for establishing a plurality of logical links running through the node contemporaneously to one or more

remote nodes, the communications node comprising

input switch means;

output switch means;

a plurality of communications resources connected between said input and output switch means, said plurality of communications resources including at least first and second communications resources adapted to deliver different communication services including packet-switched services and circuit-switched services (col. 5 lines 9 - 23) said packet-switched services delivered by a plurality of packet processing pipelines (col. 6 lines 28 - 60)

control means associated with said input switch means and said output switch means to establish logical links through the node (col. 6 lines 48 - 59) and configured to test for a route across a plurality of nodes, and if nodes of the plurality of nodes have required resources, to establish one or more logical links along the route across the plurality of nodes (col. 6 line 48 – col. 7 line 45).

Cloonan does not explicitly show where each of said packet processing pipelines processes packets according to one or more packet processing protocols, nor does Cloonan explicitly show where said logical link comprises one or more channels of a physical link, where each said logical link can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines.

Siemens shows where each of said packet processing pipelines processes

packets according to one or more packet processing protocols (pg. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan with that of Siemens in order to further Cloonan's goal of flexible evolution (Cloonan, Abstract) by supporting additional protocols.

Cloonan in view of Siemens do not explicitly show where said logical link comprises one or more channels of a physical link.

Odfelt shows where said logical link comprises one or more channels of a physical link (col. 5 lines 20 – 30, col. 13 lines 60 – 68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan and Siemens with that of Odfelt in order to optimally utilize the physical links existing in Cloonan's disclosure.

Cloonan in view of Siemens and Odfelt do not explicitly show where each said logical link can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines. However, "can be" is permissive language, and thus the claim does not require that said behavior "must be". Cloonan in view of Siemens and Odfelt is a flexible architecture (Cloonan, Abstract) implemented utilizing general-purpose computer processors, and thus, if programmed properly, can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be

carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines.

5. Regarding claim 2, Cloonan in view of Siemens and Odfelt further show wherein said communications resources include signal processing means (Cloonan, col. 15 lines 48 - 62).

6. Regarding claim 3, Cloonan in view of Siemens and Odfelt further show wherein said communications resources include packet processing means (Cloonan, Abstract).

7. Regarding claim 4, Cloonan in view of Siemens and Odfelt further show wherein said communications resources include a first plurality of communications resources adapted to serve one of said service types and a second plurality of communications resources adapted to another of said service types (Cloonan, Abstract, col. 5 lines 1 - 16, col. 22 lines 8 - 58, Fig. 17).

8. Regarding claim 5, Cloonan in view of Siemens and Odfelt further show wherein the at least first communications resource is arranged to process a component of a synchronous input signal, and the at least second of said communications resources is arranged to process a component of an asynchronous input signal (Cloonan, col. 22 lines 8 - 58).

9. Regarding claim 6, Cloonan in view of Siemens and Odfelt further show wherein a plurality of packets from a signal flow is processed by said communications resources (Cloonan, col. 6 lines 1 - 47).

10. Regarding claim 7, Cloonan in view of Siemens and Odfelt further show wherein said input switch means is arranged to receive at least one input signal partitioned such

that it comprises a plurality of signal components, wherein said plurality of logically distinct links through the node are established by means of logically associated ones of signal components (Cloonan, col. 6 lines 1 - 60, Fig. 5).

11. Regarding claim 8, Cloonan in view of Siemens and Odfelt further show wherein said output switch means is configurable to receive signal components and switch signal components onto at least one output signal which partitions said signal components, wherein said logical links through the node are extended by means of logically associated ones of the components and of the output signal (Cloonan, Figs. 5, 10 - 11, col. 3 lines 1 - 37, col. 6 lines 28 - 48).

12. Regarding claim 9, Cloonan in view of Siemens and Odfelt further show wherein said signal components are partitioned by means of one or more of: time division multiplexing, frequency division multiplexing, code division multiplexing and space division multiplexing (Siemens, pg. 10).

13. Regarding claim 10, Cloonan in view of Siemens and Odfelt further show wherein said input switch means is configurable to switch a plurality of partitioned input signals contemporaneously (Cloonan, Fig. 5, col. 6 lines 28 - 68).

14. Regarding claim 11, Cloonan in view of Siemens and Odfelt further show wherein said output switch means is configurable to switch a plurality of partitioned output signals contemporaneously (Cloonan, col. 6 lines 28 - 68, col. 7 lines 5 - 38).

15. Regarding claim 12, Cloonan in view of Siemens and Odfelt further show wherein one or more of said logical links spans more than two nodes such that it establishes a logical network (Odfelt, Abstract, Fig. 1).

16. Regarding claim 13, Cloonan in view of Siemens and Odfelt further show wherein one or more of said logical networks is initiated and/or terminated at a node (Odfelt, Abstract, Fig. 1).

17. Regarding claim 17, Cloonan in view of Siemens and Odfelt further show wherein said input switch means and said output switch means are configurable to circuit switch communications data on a logical link such that low latency transfer of said data is achieved (Cloonan, col. 6 lines 8 - 60).

18. Regarding claim 28, Cloonan in view of Siemens and Odfelt further show wherein a plurality of synchronous input signals are received at an input means and an output signal from an output means comprises components from different ones of the input signals (Abstract, Fig. 5).

19. Regarding claim 29, Cloonan in view of Siemens and Odfelt further show wherein the output switch means supplies a plurality of output signals to an output means, and wherein first and second output signals of the plurality of output signals comprise components from one input signal (Cloonan, Fig. 5, Odfelt, col. 5 lines 20 - 30, col. 13 lines 60 - 68).

20. Regarding claim 33, Cloonan in view of Siemens and Odfelt further show wherein said output switch means is arranged to switch a packet supplied from the packet processing means in accordance with destination information associated with the packet by the packet processing means (Cloonan, Abstract, col. 1 lines 45 - 55).

21. Regarding claim 34, Cloonan in view of Siemens and Odfelt further show wherein a packet from an input signal is switched such that it appears as a packet in a plurality



of output signals of an output means (Cloonan, Figs. 3 and 5, Odfelt, Fig. 13, col. 5 lines 20 - 62).

22. Regarding claim 35, Cloonan in view of Siemens and Odfelt further show wherein a plurality of packet flows each on a different logical link of an input signal are switched such that they appear as packet flows on different output signals (Cloonan, Figs. 3 and 5, Odfelt, Fig. 13, col. 5 lines 20 - 62).

23. Regarding claim 37, Cloonan in view of Siemens and Odfelt further show wherein a plurality of packet flows on a logical link of an input signal are switched such that they appear as packet flows on logical links of different output signals of an output means (Cloonan, Figs. 3 and 5, Odfelt, Fig. 13, col. 5 lines 20 - 62).

24. Regarding claim 38, Cloonan in view of Siemens and Odfelt further show wherein an input signal comprises packets belonging to a plurality of packet flows each packet flow being carried on a different logical link, wherein said input switch means is operable to demultiplex the input signal to provide individual packet flows and supply a combined packet flow therefrom to an appropriate packet processing pipeline for processing in accordance with a predetermined packet processing protocol (Cloonan, Figs. 3 and 5, Odfelt, Fig. 13, col. 5 lines 20 - 62).

25. Regarding claim 40, Cloonan in view of Siemens and Odfelt further show wherein said at least one input signal comprises a first input signal which is timed synchronously with a timing reference signal of the node and a second input signal having a rate of receipt independent of said timing reference signal of the node (Fig. 17, col. 22 lines 8 - 46).

26. Regarding claim 41, Cloonan in view of Siemens and Odfelt further show wherein at least one input signal comprises a first plurality of input signals timed synchronously with a timing reference signal of the node and a second plurality of input signal having a rate of receipt independent of said timing reference signal of the node (Fig. 17, col. 22 lines 8 - 46).

27. Regarding claim 42, Cloonan in view of Siemens and Odfelt further show receiving and transmitting signals comprising sets of signal components transmitted at intervals, wherein a set comprises a number of signal components partitioned from one another and wherein concatenated signal components in adjacent sets establish a number of logical links over a portion of a communications network (Odfelt, col. 5 lines 20 – 63, Cloonan, Fig. 17) wherein the

control means is connected to said output switch means and programmable to cause selected ones of the partitioned signal components of a set to be aggregated such that said aggregated signal components define an aggregated logical link having a bandwidth corresponding to a predetermined multiple of the signal component bandwidth (Cloonan, col. 6 lines 28 - 67).

28. Regarding claims 48, 49 and 50, Cloonan shows a method of setting up a logical link or an aggregated logical link across a portion of a network comprising providing a plurality of communications nodes for establishing a plurality of logical links running through the node contemporaneously to one or more remote nodes, the communications node including input switch means; output switch means; a plurality of communications resources connected between said input and output switch means,

said plurality of communications resources including at least first and second communications resources adapted to deliver different communication services including packet-switched services and circuit-switched services (Cloonan, col. 5 lines 9 - 23) said packet-switched services delivered by a plurality of packet processing pipelines (Cloonan, col. 6 lines 28 - 60)

control means associated with said input switch means and said output switch means to establish logical links through the node (Cloonan, col. 6 lines 48 - 59) and configured to test for a route across a plurality of nodes, and if nodes of the plurality of nodes have required resources, to establish one or more logical links along the route across the plurality of nodes (Cloonan, col. 6 line 48 – col. 7 line 45)

and routing a request to establish a logical link from a source node to a destination node over at least one of the plurality of communications nodes (col. 6 line 48 – col. 7 line 45).

Cloonan does not explicitly show where each of said packet processing pipelines processes packets according to one or more packet processing protocols, nor does Cloonan explicitly show where said logical link comprises one or more channels of a physical link, where each said logical link can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines.

Siemens shows where each of said packet processing pipelines processes packets according to one or more packet processing protocols (pg. 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan with that of Siemens in order to further Cloonan's goal of flexible evolution (Cloonan, Abstract) by supporting additional protocols.

Cloonan in view of Siemens do not explicitly show where said logical link comprises one or more channels of a physical link.

Odfelt shows where said logical link comprises one or more channels of a physical link (col. 5 lines 20 – 30, col. 13 lines 60 – 68).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan and Siemens with that of Odfelt in order to optimally utilize the physical links existing in Cloonan's disclosure.

Cloonan in view of Siemens and Odfelt do not explicitly show where each said logical link can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines. However, "can be" is permissive language, and thus the claim does not require that said behavior "must be". Cloonan in view of Siemens and Odfelt is a flexible architecture (Cloonan, Abstract) implemented utilizing general-purpose computer processors, and thus, if programmed properly, can be selectively switchable into circuit-switched services or demultiplexed via packet buffering enabling OSI layer 3 traffic to be carried without using OSI layer 2 link layer mechanisms and switched into one of the plurality of packet processing pipelines.

29. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cloonan in view of Siemens and Odfelt as applied to claim 1 above, and further in view of Turner (4,494,230).

Regarding claim 39, Cloonan in view of Siemens and Odfelt show claims 1 and 2.

Cloonan in view of Siemens and Odfelt do not explicitly show wherein said output switch means is programming with switching information such that it receives packets from said input switch means which have bypassed said packet processing means and directs them without reference to destination information in the packet.

Turner shows wherein said output switch means is programming with switching information such that it receives packets from said input switch means which have bypassed said packet processing means and directs them without reference to destination information in the packet (cols. 3 and 4, col. 3 lines 33 – 38) .

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan in view of Siemens and Odfelt with that of Turner in order to improve packet switching speed (Turner, col. 2).

30. Claims 14, 18 and 43 - 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cloonan in view of Siemens and Odfelt as applied to claims 12 and 42 above, and further in view of Mark (US 2003/0128706 A1).

31. Regarding claim 14, Cloonan in view of Siemens and Odfelt show claim 12.

Cloonan in view of Siemens and Odfelt do not explicitly show wherein one or more of said logical networks is initiated and/or terminated at an end terminal.

Mark shows wherein one or more of said logical networks is initiated and/or terminated at an end terminal (Abstract, Fig. 5, [14-16, 33-36]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the disclosure of Cloonan in view of Siemens and Odfelt with that of Mark in order to improve the ability to control and provision network resources (Mark, [12]).

32. Regarding claim 18, Cloonan in view of Siemens, Odfelt and Mark further show wherein pluralities of said logical links are programmatically aggregated and disaggregated by said node (Mark, Abstract, Fig. 5, [14-16, 33-36]).

33. Regarding claim 43, Cloonan in view of Siemens, Odfelt and Mark further show control means connected to said input switch means and programmable to cause partitioned signal components which have been aggregated at a remote node to be disaggregated (Mark, [33-39]).

34. Regarding claim 44, Cloonan in view of Siemens, Odfelt and Mark further show a plurality of signal processing means connected between said input switch means and said output switch means, wherein said input switch means is configurable to supply at least a component of an input signal to a selected one of said signal processing means (Cloonan, Figs. 5 and 17, col. 6 lines 3 – 48).

35. Regarding claim 45, Cloonan in view of Siemens, Odfelt and Mark further show wherein one or more of said node processing means is arranged to process at least a signal component received on an aggregated logical link after signals transferred thereto have been disaggregated (Mark, [33-39, 44-46]; Odfelt, col. 5 lines 20 - 63).

36. Regarding claim 46, Cloonan in view of Siemens, Odfelt and Mark further show wherein one or more of said node processing means arranged to process at least a component of a signal received on an aggregated logical link without disaggregating the partitioned signal components defining the aggregated logical link (Mark, [33-39, 44-46]; Odfelt, col. 5 lines 20 - 63).

37. Regarding claim 47, Cloonan in view of Siemens, Odfelt and Mark further show wherein at least one signal processing means is arranged to support one or more of Ethernet, ATM, IP, IP over ATM, IP over Ethernet or unpacketised data (Cloonan, Abstract).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. MacIlwain whose telephone number is (571) 272-9686. The examiner can normally be reached on M-F 7:30AM - 5:00PM EST; off alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Caldwell/  
Supervisory Patent Examiner, Art  
Unit 2442

John MacIlwain  
(571) 272 - 9686